17th National Conference of the Australian Meteorological and Oceanographic Society 2010

IOP Conference Series: Earth and Environmental Science Volume 11

Canberra, Australia 27 - 29 January 2010

Editors:

Barbara A. Burns Clem Davis Andrew E. Kiss John R. Taylor

ISBN: 978-1-5108-0200-1

ISSN: 1755-1307

Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© by the Institute of Physics All rights reserved.

Printed by Curran Associates, Inc. (2015)

For permission requests, please contact the Institute of Physics at the address below.

Institute of Physics Dirac House, Temple Back Bristol BS1 6BE UK

Phone: 44 1 17 929 7481 Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA Phone: 845-758-0400

Fax: 845-758-2634

Email: curran@proceedings.com Web: www.proceedings.com

Table of contents

Volume 11

17th National Conference of the Australian Meteorological and Oceanographic Society 27–29 January, 2010, Canberra, Australia

Accepted papers received: 26 July 2010

Published online: 16 August2010

Antarctic weather, ocean and climate systems

012001

Weather and forecasting at Wilkins ice runway, Antarctica Scott Carpentier pg. 1

012002

Tides, the PIG, and "warm" water Robin Robertson pg. 7

Weather, ocean and climate forecasting

012003

<u>Diagnosing indicators of large-scale forcing of east-coast cyclogenesis</u> Andrew J Dowdy, Graham A Mills and Bertrand Timbal pg. 13

012004

Evaluating a regional climate model's ability to simulate the climate of the South-east coast of Australia Jason P Evans and Matthew F McCabe pg. 19

012005

<u>The GOCF/AWAP system – forecasting temperature extremes</u> Robert Fawcett and Timothy Hume pg. 25

012006

Network-derived inhomogeneity in monthly rainfall analyses over western Tasmania Robert Fawcett, Blair Trewin and Ian Barnes-Keoghan pg. 31

012007

A methodology of tracking transitioning Cyclones L A Garde, A B Pezza, I Simmonds and N E Davidson pg. 37

012008

Onset, active and break periods of the Australian monsoon Hakeem A Shaik and Samuel J Cleland pg. 43

012009

<u>Improving weather forecasts for wind energy applications</u> Merlinde Kay and Iain MacGill pg. 49

012010

Extreme inflow events and synoptic forcing in Sydney catchments Acacia S Pepler and Clinton S Rakich pg. 55

012011

<u>East coast lows, atmospheric blocking and rainfall: A Tasmanian perspective Michael</u> Pook, James Risbey and Peter McIntosh pg. 61

012012

<u>Determination of visual range during fog and mist using digital camera images</u> John R Taylor and Jamie C Moogan pg. 67

012013

The climate of the Eastern Seaboard of Australia: A challenging entity now and for future projections Bertrand Timbal pg. 73

012014

<u>Influence of climate modes on tropical cyclone formation in the Australian region A</u> Werner pg. 79

Climate impacts and adaptation

012015

The great Sydney dust event: Size-resolved chemical composition and comparison Michael A Box, Majed Radhi and Gail P Box pg. 85

012016

Extreme-value time-series analysis of Australian Region A gust wind speeds to examine instrument bias R P Cechet and L A Sanabria pg. 91

012017

Development of methods for assessing the vulnerability of Australian residential building stock to severe wind Martin Wehner, John Ginger, John Holmes, Carl Sandland and Mark Edwards pg. 98

012018

Rapid Inventory Collection System (RICS) and the 2009 Victorian Bushfires impact assessment N Habili, N Corby and R P Cechet pg. 104

012019

An initial assessment of the impact of Australian aerosols on surface ultraviolet radiation and implications for human health C Y Chee and F P Mills pg. 110

012020

Climate change and the effects of dengue upon Australia: An analysis of health impacts and costs D Newth and D Gunasekera pg. 116

012021

Severe wind hazard using dynamically downscaled climate simulations L A Sanabria and R P Cechet pg. 122

012022

Role of exposure in projected residential building cyclone risk for the Australian region Denis Waters, Bob Cechet and Craig Arthur pg. 128

012023

Formaldehyde and nitrogen dioxide in smoke plumes from Australia's Black Saturday fires E L Young and C Paton-Walsh pg. 135

Observing and modelling the integrated earth system 012024

<u>Utilising temperature differences as constraints for estimating parameters in a simple climate model Roger W Bodman, David J Karoly and Ian G Enting</u> pg. 141

012025

A case study of consensus modelling for tracking oil spills Brian King, Ben Brushett and Charles Lemckert pg. 147

012026

Improved regional climate modelling through dynamical downscaling Stuart Corney, Jack Katzfey, John McGregor, Michael Grose, Greg Holz, Chris White, James Bennett, Suzie Gaynor and Nathan Bindoff pg. 153

012027

Interannual modes of variability of Southern Hemisphere atmospheric circulation in CMIP3 models S Grainger, C S Frederiksen and X Zheng pg. 159

012028

Can we define climate using information theory? J Walter Larson pg. 165

012029

Towards the development of a climate model evaluation system in the Centre for Australian Weather and climate research Lawrie Rikus, Ben Hu, Martin Dix, Ian Watterson and Tracey Elliott pg. 171

012030

NSW-IMOS: An Integrated Marine Observing System for Southeastern Australia Moninya Roughan, Bradley D Morris and Iain M Suthers pg. 176

012031

<u>Teleconnections associated with the intensification of the Australian monsoon during El</u>
<u>Niño Modoki events</u> A S Taschetto, R J Haarsma, A Sen Gupta, C C Ummenhofer and M
H England pg. 182

Ocean systems and dynamics

012032

<u>Uncertainties in bathymetric retrievals</u> Barbara A Burns, John R Taylor and Harvinder Sidhu pg. 188

012033

Estimating 21st century changes in extreme sea levels around Western Australia I D Haigh and C Pattiaratchi pg. 194

012034

Dynamics of separating western boundary currents in ocean models Andrew E Kiss pg. 200

012035

Modeling tides and vertical tidal mixing: A reality check Robin Robertson pg. 206

Climate trends, variability and extremes: past present and future 012036

An examination of Southwest Pacific explosive cyclones, 1989 to 2009 M T Black, A B Pezza and P Kreft pg. 212

012037

Rainfall declines over Queensland from 1951-2007 and links to the Subtropical Ridge and the SAM D A Cottrill and J Ribbe pg. 218

012038

Assessing rainfall trends and remote drivers in regional climate change projections: The demanding test case of Tasmania M R Grose, S Corney, J Bennett, C J White, G K Holz and N L Bindoff pg. 224

012039

<u>Scatterometer-derived Southern Ocean mesoscale cyclone activity over the last decade D</u> Irving, I Simmonds and K Keay pg. 230